4. The availability of like or substitute services or other activities in the relevant geographic area;

5. The effect, if any, on protected services;

6. The overall impact of the proposed regulatory changes on the continued availability of existing services;

7. Whether the consumers of the service would receive an identifiable benefit from the provision of the service or other activity on a competitive basis; and,

8. The degree of regulation necessary to prevent abuses or discrimination in the provision of the service or other activity and any other relevant factors which are in the public interest.

III. Burden of Proof.

Pursuant to 66 Pa.C.S. §3005(a)(2), BA-PA, as the petitioner seeking a competitive declaration for all of its business telecommunications services, has the burden of proving the competitiveness of these services. BA-PA argues in its reply brief that although BA-PA bears the burden of proof of competitiveness, once the party with the burden of proof has introduced evidence which would support a finding in its favor, the burden of going forward swings to its opponents, citing Pa. Pub. Util. Com. v. Citizens Util. Water Co., 169 P.U.R. 4th 552 (1996). While BA-PA's comment is true as far as it goes, it stops short of acknowledging, as it must, that while the burden of going forward shifts, the burden of proof does not. It always remains on the party whose duty it is to establish a particular fact. Replogle v. Pennsylvania Electric Co., 54 Pa. PUC 528, 530 (1980).

In fact, to shift the burden of going forward, the party with the burden of proof must present a prima facie case in support of its claims. When a prima facie case has been established, the burden of going forward shifts. A prima facie case, however, is insufficient to win if the opponent produces evidence which is coequal to that produced by the party with the burden of proof. Replogle, 54 Pa. PUC at 530.

The Supreme Court has also determined that the party with the burden of proof must do more than just establish a prima facie case. The party with the burden of proof must meet that burden with evidence which proves its cause of action of such weight as to preclude all reasonable inferences to the contrary. In the case of a claim of overbilling by a utility customer, the Supreme Court stated:

> Whereas a litigant establishes a prima facie case by producing enough evidence to support a cause of action, the burden of proof is met when the elements of that cause of action are proven with substantial evidence which enables the party asserting the cause of action to prevail, precluding all reasonable inferences to the contrary. [Citations omitted.]

Burleson v. Pa. P.U.C., 501 Pa. 433, 437, 461 A.2d 1234, 1236 (1983).

Thus, BA-PA bears the burden of establishing facts necessary to support the required findings by substantial evidence.

IV. BA-PA's Case.

BA-PA's argument is support of its petition is set forth succinctly at pages 1 through 4 of its main brief:

> Chapter 30 of the Public Utility Code permits competitive classification "of a telecommunications service or business activity" where there is sufficient evidence of: the ease of market entry, the presence and viability of competitors (including market shares), the ability of those competitors to offer the service or activity at competitive prices, terms and conditions, and the availability of like or substitute services or activities are available throughout the relevant geographic area. The business telecommunications market in Pennsylvania today meets all these criteria - in fact, the growth of competition in this market is explosive and continues to accelerate. Bell Atlantic - Pennsylvania, Inc.'s ("BA-PA") petition should therefore be granted.
>
> Chapter 30 removed the legal barriers to entry into the local exchange market, and, by expeditiously implementing the local competition provisions of the federal Telecommunications Act, the Commission has removed the last significant economic barriers to entry. As a result, the pace of competition for all telecommunications services -- but particularly in the provision of business telecommunications services -- has accelerated dramatically in terms of competitors' geographic presence and rate of market share growth.
>
> Virtually all (94%) business access lines in BA-PA's service territory are served by a wire center where at least one local competitor is present. Three quarters (76%) are served by wire centers where a facilities-based competitor is located. Thus, BA-PA's competitors are present throughout the geographic area where business customers are found. The rapid growth of competition is also reflected in the increases in the minutes of use BA-PA has exchanged with CLECs, and the resold lines, unbundled loops, and ported numbers BA-PA has provided to CLECs. In fact, *every quantitative measure*

of competitive activity presented in this case shows dramatic, double-digit growth since this Petition was filed late in 1997. BA-PA's competitors are thriving by pursuing a strategy of offering comprehensive packages of telecommunications services to business customers. This permits them to make the most of two advantages they have over BA-PA. First, they can offer pricing plans that are tailored to customers' needs—discounts based on aggregate revenue or "free" local calling, for example. Second, they can enhance their offerings by including services BA-PA is not permitted to offer, such as interLATA and wireless services.

Large, medium, and even smaller-sized business customers (those who spend $10,000 annually on local exchange, intraLATA toll, and special services) have access to competitive "one-stop-shopping" alternatives *throughout* BA-PA's service territory, and have for many years. But the competitive activity is not limited to these customers. Competitors are providing competitive telecommunications packages to smaller businesses as well. [BEGIN CLEC PROPRIETARY]

[END CLEC PROPRIETARY]

The presence of competitors in nearly every wire center serving business customers, their viability as demonstrated by the robust growth in their market shares, their access to unbundled network elements, their ability to purchase BA-PA services at a discount for resale to aggregated customers, the competitiveness of their service packages, and customers' increasing demand for "one-stop-shopping" and tailored discounts, taken together, ensure that competition will constrain BA-PA's ability to raise prices for business telecommunications service above market levels

Despite the foregoing evidence of competition, the existence (if not the sufficiency) of which is largely undisputed, BA-PA's competitors allege that a variety of conditions constitute insurmountable "barriers to entry" which prevent CLECs from

competing effectively with BA-PA. However, none of these purported "barriers" amount to anything more than inconveniences or the result of what can only be described as disingenuous regulatory posturing. Moreover, the competitors' protests that the obstacles to entry are insurmountable cannot be reconciled with the explosive growth in the market shares of competitors like [BEGIN CLEC PROPRIETARY] [redacted] [END CLEC PROPRIETARY] in just five months.

In addition to demonstrating that the provision of business telecommunications service qualifies for competitive classification, BA-PA has shown that its provision of business services complies with the competitive safeguards and other requirements of Chapter 30. The only serious dispute relates to the level at which the imputation analysis should be performed. Both BA-PA's and AT&T's economic experts agreed, however, that imputation should be applied at the same market level that the competitive analysis occurs—here, all business telecommunications service provided throughout BA-PA's service territory. Imposing imputation at a more disaggregate or geographically-partitioned level will increase distortions inherent in Chapter 30's imputation standard, reduce BA-PA's ability to compete on the basis of price, and thus deprive business customers of the full benefits of competition.

The record convincingly demonstrates that competition in the business telecommunications market is fully entrenched in Pennsylvania, at all customer sizes and all geographic areas. Granting BA-PA's Petition would further unleash the competitive pressure necessary to ensure that the full benefits of competition are available to all business customers. BA-PA's Petition should therefore be granted. (Footnotes omitted; emphasis in the original.)

The major premise of BA-PA's argument is that certain statistics show that there is viable competition for all kinds of

business telecommunications services throughout all of its service territory in Pennsylvania, and that therefore the statutory criteria are met (i.e., because there is competition, there must be competitors, there must be ease of market entry for all services, the competitors must be able to offer these services at competitive prices, terms and conditions, etc.). As we shall see, however, BA-PA's statistics tell much less than the whole story about the state of local telephone competition.

V. The Relevant Market.

BA-PA argues that the "relevant market" for the purpose of evaluating its petition is all business services throughout its entire service territory. All other parties oppose such a broad market definition. Aside from bare claims that telephone customers frequently want to buy "bundled service," that some of these "bundles" are substitutable for others, and that there are large customers with locations across Pennsylvania that would like to purchase telecommunications services for all their locations in one package, BA-PA has produced no credible evidence to support its proposed market definition. BA-PA has produced no evidence that any one of its competitors (or, for that matter, all of them combined) can offer the entire range of services for which it seeks competitive designation. It has offered no evidence to show the extent or nature of competition that it faces in particular geographic areas. It has offered no evidence to show how specific services available from its competitors may be substituted for BA-PA's services. (Tr. 327). It has offered

no evidence of the specific needs of different classes of telecommunications customers.

While I am not unsympathetic to BA-PA's desire to be able to bid on large contracts with multi-location customers who have diverse telecommunications needs, and while I might be convinced by an appropriate showing that BA-PA could be accorded more flexibility with respect to such contracts, BA-PA's petition goes well beyond providing it with flexibility for such customers. All of BA-PA's opponents argue that each of BA-PA's 84 services should be considered separately. While I do not necessarily agree that each service must be considered on its own, the fact that BA-PA has not attempted to show that particular services are competitive makes such a granular review impossible.

OTS argues that at least business local exchange service ("BLES") should be considered separately because it is a "protected service" under 66 Pa.C.S. §3002, and because BLES is a stand-alone service that accounts for approximately [BEGIN PROPRIETARY] [redacted] [END PROPRIETARY] of BA-PA's business telecommunications service revenue. (OTS M.B. at 11). I agree with these points, and also note that local exchange service is the cornerstone service for any provider of telecommunications services. It is unlikely that any provider of any <u>local</u> telecommunications service will render any optional or toll services (except for interLATA toll, which BA-PA cannot now render), unless it is first rendering local exchange service. Notwithstanding BA-PA's listing of 84 services, deregulation of

BLES clearly is at the heart of this case. For these reasons, I conclude that local exchange service should be the focus of this discussion.

VI. Presence and Viability of Competitors.

When it filed its initial testimony, BA-PA made no effort to quantify the extent of competition that it faces at particular points within its service territory. Instead it relied on broad claims that there are numerous companies offering services to businesses, that many CLECs have been certificated, and more are awaiting certification, that there is a considerable amount of advertising by competitors, that competitors' market shares had experienced rapid growth in the recent past, and that competitors were installing fiber optic cables in large quantities, as well as switches. (See generally, BA-PA St. 1). While all of these factors are interesting, and perhaps entitled to some weight, they are not substitutes for data regarding the extent to which competitors are actually rendering service to different kinds of business customers in different areas of BA-PA's service territory.

Rather than addressing the statutory criterion of "market share," BA-PA has focused on the "growth" of its competitors' market shares. BA-PA's reliance on "growth" of market shares, as opposed to actual market shares, is comically transparent. Because BA-PA's competitors are starting out with market shares at or near zero, any growth will look huge simply because the starting number is small. Even BA-PA's "policy

witness" agreed that a high rate of growth can simply reflect the fact that the starting market share was small. (Tr. 375).

BA-PA also conveniently neglects to state its own market share. For example, the data provided by BA-PA in Appendix I to its main brief concerning the number lines served by competitors shows that competitors are serving approximately [BEGIN PROPRIETARY] [redacted] [END PROPRIETARY] lines.[2] However, BA-PA itself served [BEGIN PROPRIETARY] [redacted] [END PROPRIETARY] as of the beginning of this year. (OCA St. 1.0 at 21-22). Thus, BA-PA's competitors, despite their significant growth over the past two years or so, control about four percent of the business lines, as compared to BA-PA's 96 percent. Not one of BA-PA's competitors serves more than a de minimis amount of the BLES market.

Similarly, the traffic exchange data that BA-PA cites as allegedly demonstrating a high level of competition in the market looks impressive only if not compared to BA-PA's own traffic. BA-PA claims that it exchanged more than 1.3 billion minutes of billed traffic with CLECs during 1997. (BA-Pa St. 1.0 at 23). However, 1996 ARMIS data showed that BA-PA itself carried approximately 88 billion dial equipment minutes of local traffic. Thus, even without the growth in BA-PA's own traffic that undoubtedly occurred in 1997 over the previous year, the 1.3 billion minutes that BA-PA claims to have exchanged with CLECs is

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[2] The validity of at least some of this data has to be questioned because one of the carriers counted is WinStar Wireless. It is not clear that it renders wireline service at all.

less than 1 1/2 percent of its own local traffic. (AT&T Stmt. 1.0 at 27-28).

Another statistic that BA-PA offered in support of its petition is a claim that "48 percent of the measurable expenditures made by Pennsylvania businesses on intrastate (interLATA, intraLATA and local) wireline and wireless business telecommunications services in BA-PA's serving area are for services provided by BA-PA competitors." (Emphasis supplied). (BA-PA St. 3.0 at 18). This is an impressive statistic, until you think about it for a second or so. Wireless service is not at issue here. InterLATA toll is not at issue here. IntraLATA toll has been subject to competition for longer than local service, and was subject to presubscription almost one year ago. This number says absolutely nothing about BA-PA's share of the revenues from BLES, which, as the OTS argues, is at the heart of this case.

The same witness who sponsored the 48 percent revenue figure also sponsored some two studies that purport to support BA-PA's claims. I will not dwell in depth on these. In my view they are no more credible as indicia of actual competition throughout BA-PA's service territory than are BA-PA's market share "growth" statistics. For example, in the second study, the participants were asked if they thought that BA-PA should be allowed to offer discounted pricing packages. It is no surprise, and of little evidentiary value to this proceeding, that almost 98 percent answered "yes" to that question; the only surprise is that a few survey participants answered "no." In general, I

agree with the comments of parties such as OSBA (M.B. at 13-15) and MCI (M.B. at 11-13) regarding the invalidity of these studies.

One other comment needs to be made here. As discussed in the history of this case, BA-PA sought and received 60 to 70 subpoenas to obtain from non-party CLECs information regarding their operations in Pennsylvania. Despite this discovery, BA-PA has offered no more quantitative evidence regarding its competitors than it has cited in its main brief. BA-PA implies, at page 13 of its main brief, that it was less than successful in pursuing such information. To my knowledge, only one company, NEXTLINK, objected to the subpoenas. NEXTLINK eventually furnished at least some information, as evidenced by BA-PA's main brief. The lack of information offered by BA-PA on this critical issue, rather than evidencing lack of cooperation, evidences lack of competition. Moreover, if BA-PA did not have enough time to pursue sanctions against non-responding companies, or to analyze the information received, it has only itself to blame, because it has insisted on an accelerated schedule to this case while waiting until after it filed its direct testimony to even seek the subpoenas that it used to obtain competitor information.

The evidence submitted by BA-PA initially on this issue is woefully inadequate to establish that there is competition for its business services throughout its service territory. In its direct testimony, the OTS attempted to quantify the level of competition in each of BA-PA's wire centers. After OTS filed its direct testimony, BA-PA filed a study of its own that attempted

to discredit the OTS study. These two studies, which have more to say about the level of competition throughout BA-PA's service territory, will be discussed below.

A. Methods of Competition.

Before discussing in detail the existence of competition throughout BA-PA's service territory, it is necessary to explore the kinds of competitors that BA-PA can face in any given market.

There are four basic ways that a competitor can take a customer from BA-PA:

1. The competitor can simply purchase BA-PA's service at the mandated discount for resale;

2. The competitor can lease from BA-PA the customer's loop and switch (the unbundled element platform, or the "UNE-P");

3. The competitor can lease from BA-PA the unbundled element ("UNE") loop;

4. The competitor can provide service over its own facilities, or by the use of special access, thereby precluding the need for either BA-PA's loop or its switch;

Each of these methods of competition has certain ramifications which require additional explanation. One ramification that I will not explore is the complaint of several parties that BA-PA's resale and UNE rates are too high. While this may be the case, the Commission has found those rates to be reasonable. I conclude that I must accept as valid the Commission's rulings on those rates for the purpose of this proceeding, because there was not sufficient time in the course

of this case to explore in detail the reasonableness of those rates.

1. Resale.

Resale, because it requires no facilities, also requires no capital investment. It thus has the broadest possible application. On the other hand, it carries certain disadvantages. A "competitor" is unable to differentiate its offering from BA-PA's on quality, is unable to introduce innovative services, and cannot assert price pressure on BA-PA, since BA-PA dominates the reseller's cost structure. (TCG St. 1.0 at 7). In fact, for all customers in the aggregate, BA-PA makes more on resold service than a reseller makes. (Tr. 352). Moreover, if this petition is granted, BA-PA would essentially be free to change its retail prices at will, with only minimal informational notice to the Commission. Under those circumstances a competitor seeking to resell BA-PA's service could not be certain from day to day of its actual costs of providing that service to end users, since the underlying discounted costs that it paid to BA-PA would fluctuate as BA-PA changed its retail rates. (AT&T St. 1.0 at 23). This fact leads to some interesting results.

On the one hand, BA-PA could force a reseller out of business simply by lowering its retail rate; while the amount that the reseller would have to pay BA-PA for the service would decline, the reseller would also have to lower its rate to remain competitive with BA-PA. This would reduce the amount that the reseller had left to cover its own costs. On the other hand, the

presence of a reseller does little to prevent BA-PA from raising its rates, at least those that are below cost. In a geographic area where there are no facilities based carriers and where rates are below costs, BA-PA can raise its rates to the level of its costs, before those rates will attract facilities based carriers, and the presence of resellers will not stop that from happening. (Tr. 1280-1281). BA-PA's rate for dial tone line service for multi-line business service in Density Cell 4 does not cover the cost of the service. (Tr. 421-422). Density Cell 4 covers the least dense geographic areas in BA-PA's service territory. (Tr. 489). Clearly, if BA-PA's petition is granted, the presence of resellers is unlikely to restrain rates at least in the rural areas, and resellers may not present viable competition for BA-PA in the long run.

During the hearings, a BA-PA witness, Harry Shooshan, opined that it would be impossible for BA-PA to raise rural rates while lowering urban rates because CLECs would be able to aggregate traffic for purposes of reselling a BA-PA individual case basis contract. (Tr. 1085). Thus, according to Mr. Shooshan, a CLEC could undercut a BA-PA price increase to small business customers in Density Cell 4 by aggregating the traffic of those customers for purposes of obtaining for resale at a wholesale discount a BA-PA customer specific contract offered to a large customer with locations in different density cells. (Tr. 1131-1133). In response to an inquiry that I made (Tr. 1153-1154), after the hearings were held, BA-PA stated that, as a condition for relief in this proceeding, it would be willing to

file, under proprietary protection, redacted copies of customer specific contracts so that they are available to prospective resellers who may want to resell the contracts to "similarly-situated customers with the same cost and other characteristics." BA-PA also reserves the right to demonstrate, under the standard set forth in Section 252 of the Telecommunications Act, that its avoided costs for these individual contracts differ from its avoided costs generally, and to use these avoided costs to develop a different wholesale rate discount for these customer-specific contracts.[3] Because BA-PA's offer came after the hearings were held, there is no record concerning the qualifiers in the offer (i.e., "similarly situated," "with the same cost and other characteristics," and different avoided costs). While I do not conclude that these are unreasonable conditions, there is simply no evidence to show how they might operate in practice. Thus, it is impossible to predict with certainty that such resale opportunities would restrain price increases in rural areas. At minimum, considering that the cost of service in rural areas tends to be higher than in urban areas, it is likely that BA-PA would resist an attempt to resell a customer specific contract from, say, Density Cell 1, in Density Cell 4, because the cost characteristics are different. Without a record on this point, I

[3] Letter dated June 9, 1998 from J. Conover, V.P. & General Counsel, Bell Atlantic - Pennsylvania, Inc., to Hon. M. Schnierle, Administrative Law Judge, Pennsylvania Public Utility Commission. Since the resale provisions of the Act apply to all local exchange carries, BA-PA would expect that other carriers would also be required to file summaries or redacted (copies) of customer contracts and that BA-PA would have the ability to resell these contracts to similarly situated customers. AT&T has already committed to make such contracts available to BA-PA. *Id.*

cannot recommend that the Commission rely on this theory and BA-PA's offer to find that there is competition throughout BA-PA's service territory.

As a practical matter, as a percentage of the entire market, there is a negligible amount of resale occurring today in BA-PA's service territory. More than two years after the passage of the Telecommunications Act of 1996, CLECs are reselling services to only approximately 1% of BA-PA's business customers. (OCA St. 1S at 37).

2. UNE-P.

It is helpful to describe how UNEs may be used to bypass an incumbent local exchange carriers's ("ILEC") network.[4] Two UNEs that are essential to local service are the loop (the line to the customer's phone) and the switching element used to serve the customer. A CLEC can lease a customer's loop and connect it to its own switch; in this case, the customer's traffic, including toll, no longer goes through the ILEC's switch. A CLEC, besides leasing the loop, can also lease that portion of an ILEC's switch that is used by the customer. If a CLEC leases the switch, it pays the ILEC for the switch, as well as for the loop. When leased together, the combined UNEs are often called the platform, or "UNE-P." I will use this terminology throughout this decision. UNE-P is not the same as resale because it allows the CLEC to offer services that the ILEC

[4] For an extended explanation of the meaning and use of UNEs, the reader is referred to the various decisions in the MFS Phase II and MFS Phase III proceedings at A-310205F0002.

itself does not offer. (AT&T ST. 1 at 22). Also, under the Telecommunications Act, it is priced differently. (Tr. 528-530).

When the Federal Communications Commission (FCC) first issued regulations pertaining to UNEs, it required ILECs to offer the loop and switch as the UNE-P. Later, the Eighth Circuit Court of Appeals invalidated that portion of the FCC regulations that required ILECs to offer the UNE-P. Iowa Utilities Board v. Federal Communications Commission, 120 F.3d 753, 813 (8th Cir., 1997), as amended on Partial Grant of Rehearing October 14, 1997.

At this time, there are no customers being served in BA-PA's service territory by the UNE-P method. As far as BA-PA is aware, no CLEC is purchasing unbundled switching or unbundled local transport from BA-PA. (Tr. 322). For this reason, I conclude that the UNE-P is not a viable means of competing with BA-PA at this time. Although I need not further discuss UNE-P because it is not now being used to render service, I will mention a few points that were discussed on the record, as this may assist the Commission, the ALJ, and the parties in the upcoming proceeding on UNE rates (if the customary naming convention is followed, this will be called "MFS Phase IV", at docket number A-310203F0002).

BA-PA is interpreting the Eighth Circuit decision as follows. Ordinarily, a customer's loop is connected to the switch through a distribution frame. If a CLEC wants to serve the customer by the UNE-P, instead of allowing the existing connection to remain in place, BA-PA requires the CLEC to lease from BA-PA collocation space. BA-PA will then provide wires from

the distribution frame to the collocation space, and additional wires from the collocation space to the switch. The CLEC will then "recombine" the elements itself in the collocation space. In offices where BA-PA has space available for physical collocation, the CLEC will actually enter the collocation cage to make the physical connection. (AT&T St. 4 at 12-14; Tr. 747-749).

In offices where there is no space available for physical collocation, CLEC personnel are not allowed to enter the office to make the connection. To remedy this situation, while keeping within the letter of the Eighth Circuit decision, BA-PA has proposed a solution apparently inspired by Rube Goldberg. Namely, the virtual collocation space will be occupied by a robotic connection frame. After BA-PA has connected the loop and the switch to the robotic frame, the CLEC will use a computer to remotely operate the robot mechanism and the robot will make the final connection, thereby enabling at least superficial compliance with the Eighth Circuit decision, while also keeping with the rule that precludes the CLEC from actually entering BA-PA's office to work on virtually collocated equipment. (Tr. 539-541, 751-753).

During the hearings, an AT&T witness proposed, for the first time, an alternative solution to BA-PA's, to allow the CLEC to recombine the loop and switch without going through the expense and complexity of collocation. This would involve allowing the CLEC to remotely access software control of the switch, as BA-PA itself does when it turns on a customer's service or makes changes to that service. (Tr. 572-574). This

solution was not explored in depth because it was injected into the proceeding too near the end of the hearings.

Before commenting on the legal and technical aspects of the UNE-P, it is also useful to explore the economic aspects. The CLECs claim that the UNE-P is overpriced, and that BA-PA's collocation requirements make it financially impractical to render service using UNE-P. (AT&T M.B. at 21-34). BA-PA responds that the UNE-P is just a way of letting the CLECs purchase service for resale at a better price. (BA-PA R.B. at 30-32). The reality is neither, but involves the relationship between costs and retail rates of the ILECs, like BA-PA. As explained in more detail at pages 18-22 and 56-57 of my recent decision in Generic Investigation of Intrastate Access Charge Reform, I-00960066 (issued June 30, 1998), while purchasers of UNEs will not have to pay access charges, that is not true of CLECs who provide service by reselling an ILEC's service. Resellers, unlike the purchasers of UNEs, are not paying for access when they purchase local service for resale. BA-PA, and other ILECs, clearly do not like the idea of UNEs, especially the UNE-P, and for good reason. If an ILEC is required to provide a UNE loop or the UNE-P, it loses that customer's access revenues. On the other hand, ILECs are not as hostile to providing service for resale at a wholesale discount off their retail rates; when providing service for resale, the ILEC continues to collect access charges. Obviously, if access charges decrease and basic service rates increase, the retail rates for basic service will approach the UNE rates, making UNEs more attractive as a way to

serve customers. At the same time, because access charges, and thus revenues, will decline significantly, the ILECs' animosity toward UNEs, and the UNE-P in particular, should also decline.

It seems to me that the Eighth Circuit decision is an unfortunate attempt to impose a legal solution on an economic problem (the imbalance of rates and costs). Similarly, BA-PA's collocation requirements for UNE-P are a misguided engineering solution to the same problem. Frankly, from a purely technical standpoint, it makes no sense to require collocation cages (in the case of physical collocation) or robotic connection frames (in the case of virtual collocation) to solve an economic problem. Moreover, BA-PA's approach to this not only imposes unnecessary costs on the CLECs seeking to use UNE-P to serve customers, it also wastes collocation space for no good reason.[5] On the other hand, given the current rate structure, it should not be surprising that BA-PA is trying to protect its access charge revenue stream.

UNE-P should be made available at a reasonable cost to facilitate entry in rural areas. As discussed below, facilities based competitors are unlikely to invest in switches and their own loop facilities in rural areas, simply because the number of available customers does not justify the expense. However, in the long run, society would be better served by first addressing

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[5] AT&T resorts to rather lurid language in describing BA-PA's collocation requirement, describing it as "ripping the network apart." (Tr. 583). While this kind of language is overly dramatic, and, consequently not very helpful, the fact remains that BA-PA's interpretation of the Eighth Circuit order serves no legitimate technical purpose.

the rate imbalance problem. This might avoid imposing counterproductive legal or technical solutions on an economic problem arising from the historic regulation of phone service. After rates have been brought more in line with costs, if BA-PA continues to resist providing UNE-P in a rational fashion, the Commission should order that it be provided without the requirement of collocation or robotic connection frames. (While BA-PA insists that the Eighth Circuit decision precludes even the state commissions from ordering an ILEC to rebundle the service, it acknowledges that the state commissions probably have the authority to decide the manner in which an ILEC must allow a CLEC to rebundle UNEs. See BA-PA M.B. at 32-36, and especially note 78 on page 33).

3. Unbundled loops.

In this case, a CLEC purchases from BA-PA only the customer's unbundled loop(s). The loops are disconnected from the BA-PA switch and connected to the CLEC's own switch. This has the obvious advantage to society of increasing switch capacity in the telephone network. It also obviously allows the CLEC to offer services that are not offered by the ILEC, and reduces the CLEC's dependence on the ILEC. For these reasons, it is a superior method of competition as compared to resale or UNE-P. There are, however, certain other prices to pay.

First, it takes six to nine months to install, test, and begin to use a switch. (Tr. 530-531, 766). When a competitor purchases unbundled loops from Bell Atlantic, it must establish collocations in order to access those loops.

collocations are not cheap, and do not occur quickly. Even under the best of circumstances, establishing a fully functioning collocation will take several months, with physical collocations taking approximately 150 days. (Tr. 608-609, 790-793). The cost of each collocation space runs between $50,000 and $64,000. (Tr. 532-533, 609). Clearly, a CLEC will not install a switch unless it expects to obtain enough traffic to justify it. Because of the smaller number of customers, it is unrealistic to expect that competition will arise in rural areas by this method.

BA-PA points to CTSI as a company that is competing for small business customers in rural areas. (BA-PA M.B. at 16-17). However, CTSI renders service using partitioned switching capacity purchased from Commonwealth Telephone, an affiliated ILEC, to provide service in competition with BA-PA. CTSI is assisted in providing service because it does not need to purchase a costly switch outright and can share a switch with an ILEC. (Tr. 1625, 1628-30). The presence of CTSI does not establish that, in general, the purchase of unbundled loops for connection to a CLEC switch is a viable method of competing for rural customers.

A BA-PA witness, Dr. Taylor, an economist, posited that a CLEC could serve an area 50 miles in radius from one switch. (Tr. 1287). He was unable to discuss in any detail technical problems which might arise when using a switch in this fashion. At least, there would be a need for fiber optic lines and the associated electronics to carry loops from remote areas back to the switch. (Tr. 1289-1290). In my view, this testimony does

not establish that a CLEC can easily offer local service anywhere within 50 miles of an installed switch.

4. Service by a CLEC over its own facilities or using special access.

While UNEs are important to competition, it is also necessary to understand that UNEs are not required to provide competition for access revenues.. For business customers who have sufficient telephone traffic, there are other strategies that a competitor may use to displace the ILEC as the service provider.

Perhaps the most ubiquitous form of this competition is the CLEC that constructs a fiber optic ring in an urban area and connects it to its own switch. TCG is an example of such a carrier. (TCG St. 1 at 5-6, Att. A). Customers whose locations are on such a CLEC's fiber ring ("on-net" customers) can be served directly without loops or switches from BA-PA. Nevertheless, even for these customers, the CLEC must collocate with BA-PA at one point in each LATA simply to interconnect its network with BA-PA's network. (Tr. 696-697).

Such a CLEC can also serve "off-net" customers, i.e., those located at a distance from its fiber ring, by leasing facilities from BA-PA to reach that customer. For small customers, the CLEC would lease loops from BA-PA. For larger customers, the CLEC would lease high capacity circuits, like T-1s, from BA-PA or some other provider. In these latter cases, the CLEC would have to collocate with BA-PA in order to receive the loops or T-1 circuits. (TCG St. 1 at 7-8; Tr. 1352-1355). Obviously, this method of competition, like the use of unbundled

loops, requires a CLEC to invest in a switch, and purchase at least one collocation site from BA-PA in each LATA, as well as to install a fiber ring to reach the potential customers.

A variation on this theme is the method of operation employed by CTSI. Sometimes, CTSI leases unbundled loops or high capacity circuits from BA-PA and transports them back to switches that it shares with Commonwealth Telephone. For large customers who are in BA-PA territory adjacent to Commonwealth Telephone territory, CTSI may build its own high capacity circuit to bring a customer's traffic back to the shared switch. (Tr. 1624-1627, 1638). Generally, CTSI builds its own facilities only to serve large customers, i.e. those with 20 lines or more. (Tr. 1628, 1638). If there is a small customer along a CTSI line to a large customer in BA-PA territory, CTSI will offer to serve that smaller customer if it has sufficient capacity on the line, if the electronics are not too expensive, and if the additional line to the smaller customer is short. It is simply too expensive for CTSI to build long lines to reach small, i.e., three or four line, customers. (Tr. 1641-1642). BA-PA acknowledged the economic reality of this situation. In a rural area where there is a large customer, a CLEC may come in and install fiber facilities to serve that large customer, which may also provide a competitive alternative for small customers in the immediate vicinity. Small customers in rural areas without a large attractive customer would be unlikely to have such alternatives. (Tr. 390-392).

AT&T also has a variation on this th "Digital Link" service. AT&T uses a long distanc provide both local and toll service to a customer. Because the long distance switch cannot provide a d customer using Digital Link service must be able to dial-tone either through its own PBX or BA-PA Centr Now, there is a second limitation that AT&T is attemp certain kinds of outgoing calls, including 800 ca calls, must go through BA-PA (Tr. 550). AT&T mark Link to customers that have sufficient traffic. Such would be buying [BEGIN PROPRIETARY] [redacted] [END PROPRIETARY]. (Tr. 1453-1455). The ma incentive for AT&T to offer, and customers to purcha Link service is to avoid BA-PA's toll access charges. 1460).

BA-PA attempts to portray Digital Link se major competitive threat, because it is available throu PA's service territory (Tr. 1453), and because AT&T ha its dedicated access customers Digital Link local s exchange for a commitment of only $300 per month j local and intraLATA toll usage per dedicated access lo PA St. No. 1.1 at 21-22), thus lowering the customer's for services BA-PA could provide to only $3,600 pe single-location customers. (BA-PA M.B. at 11). portrayal of Digital Link does not withstand close sc overriding consideration with this service is the ne